upon which, however, I trust, at a future time, to be able to bestow some attention; but I cannot but observe that the malignancy of an enchondroma, or of any other growth, the homology of which is beyond dispute, would at once overturn the assumptions of those who suppose that heterology of structure is necessary to account for the malignancy of cancer.

ART. II.—*Account of an Epidemic Fever which Prevailed at Somers and Yorktown, Westchester County, N. Y., during the Months of February, March, April, May, and June,* 1859. By CHARLES A. LEE, M. D., of Peekskill, N. Y.

As the contagiousness of typhoid fever is not yet generally admitted, any facts bearing on this point possess a degree of interest sufficient to entitle them to be laid before the profession. It is very obvious that observations relating to the contagiousness of this disease can be most advantageously made amongst the scattered population and in the small villages of the country. It was under such circumstances that the following cases were observed. No one can doubt, on reading the history of these cases, that the disease was typhoid fever, in a majority of cases of a mild type, in others of a very malignant form. In all, some fifty cases have occurred during the last three months, scattered over a thinly peopled district of several miles in extent. Of this number, but two proved fatal. All the cases could be traced to one single source, a sporadic case, originating under circumstances likely to give rise to idio-miasmatic infection. The disease originated in Yorktown, but a majority of the cases occurred in the adjoining town of Somers, Westchester County, N. Y., all, however, traceable to the original case.

CASE I. The first case which occurred, and to which reference has been made, was under the medical charge of Dr. Curry, a highly respectable practitioner of Yorktown, to whom I am indebted for the following history of it, as well as several other cases which follow:—

"Fred. S., a stout, healthy young man, aged 24; habits good; intellectual capacity good; weight, 160 pounds; had received a violent shock from falling from a wagon two months before; was comatose for forty-eight hours from the concussion, the head receiving the whole force of the fall; recovered in a week entirely; went to work, and was much exposed through the whole month of December; suffered greatly with cold, having a job that required continual attention; ate cold dinners, otherwise lived well; drank a moderate quantity of spirits; immediately after the extreme cold weather, was attacked with diarrhœa, which prevented his working; remained at home, and sent to me for medicine; kept sending for three weeks, until I became wearied, and told his friends that I must see him; I did so; found him about the house and yard; his appearance was startling; his face was pinched, pale, and cadaverous, his eyes sunken and sleepy; he was deaf; skin hot and burning; pulse 120; constant but moderate subsultus; perfect coherency; tongue red, dry, and nearly clean; much thirst; abdomen moderately tense, but extremely tender; bowels moving every hour; black, foul discharges, moderately copious, and tinged with blood; appetite much impaired, but not gone.

"I pronounced it a case of typhoid fever, urged the patient to bed, applied a blister to abdomen with great relief, gave calomel and opium in large doses, kept poultice to bowels for two weeks, gave Port wine, beef-tea, brandy, and quinine. At the end of forty days from the time of the attack, he began to convalesce, and at the end of sixty days was well."

"From this case," says Dr. C., "arising in the manner described, there have shot off, in perfectly straight lines, thirty others, bearing each idiosyncratic symptoms, but of the same general type. The residence of the young man, whose case I have referred to, stands upon the highest hill in Yorktown, two story, no basement, rooms small, no ventilation in the apartments occupied by him, except from the south, family large, two or three sleeping in a bed, no squalor, no fastidious neatness."

Case II. "During the progress of the case," says Dr. C., "his brother, a very strong man, weighing 190 pounds, 25 years old, just recovered from a venereal disease, was attacked with rigors, headache, furred tongue; and, at the end of a week, in spite of cathartics, emetics, and sweatings, was a confirmed case of typhoid; bowels tympanitic, dejections frequent and offensive, slight sordes, delirium sometimes mild, at others furious, eyes red, countenance congested, as also slightly the lungs, pulse 90, and intermittent. It was a hard case; the treatment was severe, and he began to convalesce in twenty-one days; was well in thirty-five."

Case III. "Simultaneously with this last, and in another room, his sister, aged 17, large and healthy, was attacked in the same manner; the same general symptoms were present, but much milder. Through the expectant mode of treatment, she recovered, without much suffering, after the third week."

Cases IV. and V. "These cases," continues Dr. C., "were in the lower story; but the contagion went up stairs, laying prostrate a married lady in the seventh month of pregnancy, and her daughter, aged 9. Both were severe cases, and recovered only after three or four weeks of strong treatment. At this period, however, the seeds of the disease were producing fruit among those neighbours who had been most attentive to this suffering household."

Case VI. "About the 1st of February, I was called to see P. H., residing in Putnam County, about two miles from the family before spoken of. He was a strong man, 26 years of age, a journeyman carpenter, and fellow-workman with the first-described patient, and had nursed and watched over him for many days, until he became himself sick. When I first saw him, he was suffering under the usual premonitory symptoms, much headache, sickness at the stomach, loss of appetite, slightly furred tongue, and chilliness; pulse 75. I gave him quinine at once after opening the bowels; but I do not propose to give the details of the treatment. The case went on for three weeks; the patient was delirious most of the time; he became blind and deaf; the bowels were slow, but all the time moderately tender and tense. At this time, sweating began, and with it hemorrhage from the bowels, not by quarts, but by gallons. He sank till every hope was gone. Brandy, opium, and tannin were used in immense doses with slight relief, when I began the use of sugar of lead in ten grain doses every time the bowels moved. The third exhibition of this medicine stopped the flow four days, when two teaspoonfuls of castor oil produced a moderate dejection from the bowels, the most healthy consistence of all. By continual bracing, the patient recovered at the end of about fifty days from the attack."

Case VII. "While this patient was under treatment, another came under my charge, four miles to the westward, a very infirm lady, aged 66, but as decrepit as many at the age of 86. She was the mother of one of the former patients, had been much in the sick-room with her, and had washed the clothing from her person and bed. Headache and gastritis were the ruling symptoms. Her tongue was stiff for six weeks, so hard and cracked that she was entirely unable to protrude it; and a cloth wet with ice water was kept upon it by night and by day. She was for a long time nearly comatose, always thirsty, suffered much with singultus, would always take food, though always driven to it, became so emaciated and helpless that bed-sores were formed, had distinct petechiæ, seemed frequently dying from inanition, but finally rallied, and began to sit up at the end of eight weeks. The expectant mode of treatment alone saved her."

Thus far we are indebted to the notes of Dr. Curry for the history of this epidemic. Going back, however, to the month of February (the disease seems to have commenced in January, 1859), we have the history of the following case, from the pen of my friend, Dr. James Fountain, of Jefferson Valley, the attending physician. It should be stated, both in justice to Dr. Curry and Dr. Fountain, that their notes were not prepared with a view to publication.

Case IX. "The fever, of which the following is a short narrative, seems to have been generated in my neighbourhood in a family, in a situation calculated to engender idio-miasmatic agents. It was an idio-miasmatic fever. On the 14th February, I visited a Mr. Tompkins, living within a short distance of the family referred to (Case 1), who had been sick of a typhoid fever. He had visited the family often, and had been for four or five days chilly and feverish, with flushed face and distress in his head, but no severe pain in it. He was moderately thirsty; had some appetite; pulse 100, soft and small; tongue had only a thin, white scurf, confined mostly to the back part of the two lateral halves, diminishing towards the centre and edges; sides and apex clean, and the whole moist. He had a strong predisposition by parentage to insanity, and, in fact, he was always in a peculiar state of mind, apart from a due balance, with an evident unsound look of countenance. His mother was of the same caste, and often quite insane, and his uncle and grandfather, by her side, were insane over forty years previous to their death. I prescribed a cathartic of calomel, followed by salts and senna. I left him a dose of calomel and Dover's powder, to be taken at bedtime, to be followed by castor oil next morning. I saw him the next day, about 3 o'clock P. M., and found him much worse, evidently from the opium in the powder, for his face was suffused with blood, and his head pained him violently; pulse 115. I immediately commenced the free use of tartrate of antimony and potassa, with ice to the head. He was soon nauseated, and, in about two and one-half hours, he vomited. On the next morning all was quiet; pulse 100; tongue the same; headache gone and never returned, but he uniformly complained of a peculiar distress in his head, differing entirely, he said, from headache. I will here discontinue the details of the case as too tedious for the occasion, and only notice the peculiarities he had for nearly two months. His bowels became irritable from the use of calomel and tartrate of antimony, occasionally employed, and his mouth became very aphthous. Ipecac. and nit. argenti ultimately removed this condition. On the third day, the mind began to wander, and this aberration continued throughout, and, towards the close of his life, he was often raving, and would be up and dressed frequently. During his whole sickness he had very little thirst, and no pain, no foul tongue; it soon cleaned off, was red, smooth, dry, or shining; no sordes about the teeth; no offensive breath, nor offensive odor from his breath, or person, or bed. It was, throughout, a clean sickness. The fever was so confined to the brain and nervous system, that I viewed it more in the light of a cerebral perturbation than a general fever. Finally, after various appearances of convalescence, effusion took place in the brain, and he died comatose. Witnessing the bad effect of opium given in my Dover's powder on the start, and viewing it mostly as a brain affection, I prescribed no opiate until towards the close. I then had recourse to it only to calm his ravings, which it did, and rendered the closing scene quite comfortable."

CASES X., XI., XII., and XIII. "A few days after his decease, his two sons, aged 13 and 15, were attacked in the same gradual manner, but the brain in both was less affected. They remained sick two weeks, and then a younger son was attacked with chills, fever, and violent delirium. A full dose of tartrate of antimony and a calomel cathartic arrested this case at once, and cut it off in twenty-four hours. Soon after this, the daughter, aged 16, who had for three weeks shown symptoms of the disease, took her bed. She remained sick about ten days, and then convalesced. In all these children's cases the bowels were sluggish throughout, and remained so during convalescence. In all there were morning remissions and evening exacerbations. Distress, not pain in the head, a thin, white scurf on the tongue, moderate or no thirst, mental wanderings, no sordes around the teeth, no fetid breath, nor offensive odor from the body, no stupor. In fact, in these cases the fever seemed to spend its whole force on the brain and nervous system. Hence it may fairly be called a nervous fever. The most effectual remedial agent I used was a solution of tartrate of antimony, given during the exacerbations in fully nauseating doses. Its specific effect operated like a charm in removing the flush of the face, and in producing calm sleep. I found, on fair trial, that quinine, given during the remissions, aggravated the exacerbations, and did very great injury, although the remissions were accompanied with profuse perspiration. I found the disease of a mild type, and free from danger in well-balanced constitutions, but persistent in its career and true to itself."

These cases will serve to give a pretty accurate idea of the character of the disease.

The first case to which I was called (20th April), was that of W. S. Tompkins, a brother of Thomas T., whose case is above described by Dr. Fountain, aged 35, farmer, good constitution, and very temperate habits. He had been considerably exposed to the disease, having watched several nights with his brother, the latest about three weeks before he was taken down. Previous to this, however, he had been troubled with bilious derangement, a thickly furred tongue, headache, vitiated taste, loss of appetite, &c. He kept about, though feeling very unwell for two or three weeks previously, until about the 15th of April he took to his bed. He had been under the charge of Dr. Fountain from the time of his attack; who had administered several cathartics of calomel and salts, an emetic, and antimonial solution, besides applying one blister to the chest, and another over the back. I found him laboring under excessive nervous irritability; mind wandering; tongue moist, and but slightly coated with a white fur; skin warm, and bathed in a warm perspiration; great irritability of stomach; pulse 90, and soft; respirations 34; face flushed, with evident determination of blood to the head. He had constantly complained of great distress and pain in the back of the head. The discharges from the bowels were very copious, of a highly bilious character, and very offensive. The prostration was very great, syncope being induced by sitting up in bed. Wakefulness was a prominent symptom. The mind was incoherent for the most part, answering questions, however, intelligently; occasional tympanitis, pain, and gurgling in the bowels; the pulse ranged from 90 to 100 throughout the disease. The fever ran about twenty-one days, when convalescence began, and went on rapidly. The treatment was mildly expectant. Suitable nourishment, as beef and chicken-tea, barley and rice-water, arrowroot and corn-starch, were the chief remedies. The only medicines employed were acet. ammonia; spt. nit. ether; comp. tinct. opii; Dover's powder; ol. ricini; hydrarg. cum creta; and fluid ext. senna and rhei. Good wine and brandy were regularly but sparingly given; the other remedies from time to time, as circumstances required.

Up to the present time, June 16th, 1859, I have attended, since April 20th, ten cases of typhoid fever, varying in severity and duration from those in which the patient was scarcely obliged to take to the bed, to those attended with extreme prostration and malignancy. From these cases, though few in number, the following particulars may be gathered.

Symptoms of the Access.—These were either *cephalalgia,* or a peculiar sensation of distress in the head, not amounting to actual pain, more frequently in the posterior and basilar portions; a rumbling sensation, and ringing or buzzing in the ears; stiffness and pain in the neck and jaws; difficulty of swallowing; *anorexia, loss of appetite, and not unfrequently nausea* (in some cases the appetite continued quite good up to the day when the patient was obliged to take the bed); *chilly sensations,* or a distinct *chill,* varying in duration and severity in different cases; *pain in the limbs or loins; lassitude; bronchial irritation and cough,* with *soreness or pain in the chest; in one or two cases diarrhœa; in a few costiveness;* but in many the bowels were natural. The duration of the prodromic or forming stage varied greatly, from one day to four weeks, or even longer, if the patient could be believed. Usually, the stage of incubation, after exposure, lasted from one to two weeks. Several kept about for several days after the fever had fairly set in, but, in most cases, they took to the bed immediately. A few went through the disease without taking to the bed at all, except for an hour or two through the day, and then with their clothes on.

Causation.—With the exception of the first case, which, we have seen, originated from exposure to extreme cold, fatigue, and, perhaps, unsuitable food, all the others, it is believed, can be traced to contagion. In a few cases, the patients had been a good deal worn down by watching, fatigue, and anxiety, but others who watched but a single night were also attacked, and, in one case, soon after washing the clothes of a fever patient. The severity of the disease in every instance, when not aggravated by treatment, seemed to be in a good measure proportionate to the degree of exposure in the sick-room. Those but slightly exposed were but slightly affected, and *vice versa.* At first, it was not believed to be a contagious fever, and very few precautions, by way of ventilation, &c., were used to guard against it; as it progressed, however, so strongly marked did this feature become, that it was difficult to obtain watchers and nurses for the sick. Of the physicians who watched its progress, none doubted its contagiousness, after the first few cases. More males than females were attacked by it; but this may have been owing to the fact that the first person seized was a male, and had men watchers; they, on being attacked, had also watchers of the same sex, and so on. Five adult females, in families where the male head was attacked, became subjects of the disease, and some ten or twelve children of both sexes, under the same circumstances; most of these cases being comparatively mild.

All the cases which have occurred since the first case, fifty odd in number, may be distinctly traced to personal infection; and no sporadic case, since the first, has occurred, where the individual has not been thus exposed. Of 14 persons who watched with Wm. S. Tompkins, brother of the patient who first sickened, 7 took the disease. Where great attention was paid to changing frequently the bed and body linen, cleansing the patient's body and limbs daily, and free ventilation, no other member of the family, nor any who watched with the sick, were subsequently attacked;[1] but where these were neglected, nearly every inmate was seized, and about half who stayed for any length of time in the sick-room. The observed facts go to sustain the conclusions of M. Gendron, viz., that typhoid fever propagates itself very slowly by contagion; that the interval between the successive cases may vary from three weeks to a month, so that the fever may be several months spreading through a village or neighbourhood; that the period of incubation rarely exceeds eight or ten days, though it may extend to fifteen or more, and occasionally be as short as twenty-four hours. I have good reason, however, to doubt the correctness of his conclusion that the power of transmission, or communication, does not exist in the early period of the disease, and is rarely active before the sixteenth day.

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[1] An exception to this has occurred since the above was written. A Mr. C. went safely through the disease—the fever running about twenty days—and though the greatest attention was paid to ventilation and cleanliness, the bed and body linen being changed daily, the wife and daughter, who had nursed the patient throughout, took the disease, from which they have not yet entirely recovered (August 1, 1859).

Symptoms referable to the General Aspect; Expression of Countenance, &c.—As a general rule, there was more or less dulness or listlessness of expression, with a peculiar lack-lustre of the eye. The complexion, in cases of much severity, was considerably altered, sometimes of a dusky hue, at others, reddened, or slightly livid. The capillary vessels of the cheeks, especially, were much congested; occasionally the congestion extended to the chest and other parts of the body. The redness disappeared on pressure with the finger, returning with greater celerity in proportion to the brightness of the colour, and less quickly in proportion to its duskiness or lividity, a fact, first particularly noticed in this disease by Dr. Flint, showing, as he inferred, that the colour is an indication of the degree in which the forces of the circulation residing in the capillary system are depressed. It has been suggested that this capillary congestion of the face and surface generally is dependent on the complication of pulmonary disease, but no such connection was observed in the cases which came under my observation. Indeed, the deepest suffusion was observed in some instances where there was no pulmonary complication at all, and, on the other hand, in some cases where there was considerable pulmonary congestion, there was no change in the colour of the countenance observed, nor was there any special connection noticed between the degree of capillary congestion and the state of the pulse, as to force and frequency. Whether such appearances of the surfaces, like petechiæ, may not rather be dependent on the state of the blood than the forces of the general circulation, remains to be determined by future observations. In one severe case, *great tremulousness of the muscles of the face* was strongly marked; some lost their natural expression of features; in a majority, especially of the severer cases, the *expression was heavy, dull, stupid, or vacant,* while in some, it was nearly natural throughout. Most of the patients lay on the back, and, in the worst cases, the tendency to slide downward in bed was noticed. Other positions were assumed where the disease was mild, or its severity abated.

Symptoms referable to the Nervous System.—These were generally strongly marked, and, in severe cases, always present, varying, however, in kind, as well as degree. In three or four cases, delirium may be said to have been *active;* in some, *passive.* In mild cases, it was wholly absent. In one case, the patient attempted to stab himself with a penknife, and required close watching. In general, it manifested itself by incoherent speech, loss of memory, partial abolition of hearing, and in one of sight. Some complained of a peculiar and indescribable feeling in the head, rumbling or ringing in the ears, and perversion or loss of the natural taste. The latter was observed in every case, except the very mildest. The patient would often insist on getting out of bed, and dressing himself, even when unable to stand, often asking irrelevant questions, and showing total unconsciousness as to his real condition. In several instances, the patient could not be induced to take the bed until the physical strength was so far exhausted that he was no longer able to sit up. There was no persistent delusion in any case, but a constant succession of vagaries and whimsical notions. No fear of death was manifested in a single instance. In every case, the patient gave replies to questions, but would immediately relapse into a dreamy or half-conscious state. The feebleness of the intellectual operations seemed to bear a direct proportion to that of the physical powers. The memory was particularly deficient; and, on recovery, they could very imperfectly recall any of the circumstances that had transpired. *Opiates* did not seem in my own practice, to increase the cerebral disturbance. For the most part, they had a contrary effect. In the only fatal case I attended, a man above 60, who died from peritonitis from perforation of the intestines, there was no delirium nor mental aberration whatever. His intellect remained clear up to the very moment of death. The case, however, was regarded as a mild one up to the time when perforation suddenly took place. In addition to the sluggishness of the mental powers, and absence of anxiety as to the result, no emotional sensibility was manifested, either pleasurable or otherwise. *Somnolency* was present in most of the cases, *vigilance* in several; while *coma* was present in only a single instance of the cases under my charge.

Senses and Sensibility.—In most of the cases, there was a peculiar feeling of distress or actual *pain in the head;* in two, cephalalgia was very severe. In a majority of cases, it was moderate; but, in general, it was more commonly observed during the *access* than after the disease was fully formed. *Pain in the limbs* was of frequent occurrence, seemingly of a rheumatic or neuralgic character. Sometimes it was seated in the loins, chest, or back, especially the back of the neck; but in no case was it of long continuance. In most cases, there was *diminished general sensibility.* No particular morbid changes were observed in the *eye,* except the dulness already noticed. *Deafness,* or at least *dulness of hearing,* was frequently present. In a few cases, there was increased susceptibility to sound. No perversion of the sense of *smell* was observed; though that of *taste* was almost uniformly affected. *Involuntary muscular contractions* were only observed in two instances, both of which recovered. *Picking the bedclothes* was noted in one case.

Prostration.—This was not extreme in any case. The patients could generally raise themselves in bed, or be assisted to a chair, and remain seated or semi-recumbent while the bed was being made. They usually were assisted out of bed to pass their evacuations; though in four cases a bed-pan had to be used, syncope being induced by the erect posture. In a few cases, patients, as already noticed, passed through the disease without taking to the bed, except reclining occasionally.

Symptoms referable to the Digestive System.—The *appetite* was usually wanting during the accessory period, but not invariably. There was a general loathing or dislike of animal food and broths, as beef-tea, chicken-tea, &c.; and considerable urging was necessary to induce the patients to swallow them. *Thirst* was not strongly marked, except in two or three cases; in a majority, the patients seldom asked for drink, but took it freely when offered. It may be that the frequent absence of this sensation is owing, as Dr. Flint has suggested, to bluntness of perception, or mental apathy, as the morbid conditions which occasion thirst are present. The *tongue* was generally moist, and covered with a thin white coat; in many, it presented nearly a healthy appearance; in one, the teeth, lips, &c. were covered with black sordes. A dry state of the tongue, which I have usually met with in a majority of cases of typhoid fever, was rarely observed in this epidemic. Dr. Flint noticed dryness of the tongue in thirty-six out of fifty cases, and attributes it not merely to a diminution of the secretions from the salivary glands and mucous follicles, but also to the apathy of the patient as respects painful sensations. The patient, experiencing little or no discomfort from the dryness and hardness of the tongue, does not move the organ sufficiently to diffuse the scanty salivary secretion over its surface, the tongue, moreover, remaining motionless from participating in the inertia of the muscular system, aided also by the somnolency which is present,[1] in consequence of which he respires chiefly through the mouth. If this explanation be correct, and it seems highly plausible, then we may infer that there was less mental apathy and somnolence in this epidemic than in the hospital cases recorded by this author. In one case only was the tongue *reddened, glazed,* and *fissured.* In this case, it was so stiff that the patient could not thrust it from the mouth. The patient died from peritonitis, consequent on perforation. This state of the tongue had existed about one week previous to his death. *Tremulousness of the tongue* was observed in a few instances; but this, as well as the appearances of the tongue, were of no great use in forming a prognosis. The same remark will apply to the *difficulty of protruding the tongue,* which would seem to be rather connected with the state of the mind, or voluntary power, than to diminished muscular force. *Nausea and vomiting* rarely occurred, unless caused by medicine. The *alvine discharges* were usually of a healthy character, if the bowels were not disturbed by medicine. In several cases, however, they were of a highly bilious character; in a few, *mucus* abounded in the evacuations. Diarrhœa was not unfrequent when indigestible food or improper drinks were taken. In one case, severe diarrhœa was brought on by drinking cider and buttermilk. The bowels were in many cases easily disturbed. There was an irritable condition of the gastro-intestinal mucous membrane, which rendered the use of antimony and other irritant medications very hazardous. When spontaneous diarrhœa occurred, however, it was generally easily controlled. *Costiveness* was present in three cases. *Hemorrhage* from the bowels occurred in two cases; and in both it was profuse. *Tympanitis* was present in three cases; *abdominal tenderness* was extreme in the fatal case; in six others, it was present, but moderate in degree. It was mostly confined to the right iliac region. *Gurgling* was present in four cases, and was usually associated with tenderness on pressure, and tympanitis.

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[1] Clinical Reports on Continued Fever, &c., p. 64.

Cutaneous Eruptions.—These were present in a majority of cases, of a rose red colour, and oval in shape, and confined, so far as observed, to the chest and abdomen. *Petechial eruption* was noticed in two cases, scattered over the whole body. *Sudamina* were not noticed in any case.

Symptoms referable to the Respiratory Apparatus.—Bronchial irritation and pulmonary congestion were marked symptoms in a majority of the cases of this epidemic. In some slight, in others so severe as to complicate the case very seriously. In one case it occurred in connection with pneumonitis. In three cases cough was one of the earliest symptoms. In one case the congestion was so great and the cough so urgent, as apparently to threaten suffocation. In a few there was no cough and no pulmonary symptoms. Expectoration was generally difficult, owing to the thickness and adhesiveness of the sputa. In two cases there was congestion of the mucous membrane of the mouth and fauces, as well as the bronchi.

There was *pain in the chest* in two or three cases, and it was always associated with cough. *Aberrations of respiration* were not unfrequent, varying in number from eight to forty per minute. In one case there was *stertor;* in three *sighing respiration;* in two *fainting* on slight exertion or mental excitement. In a majority of cases the breathing was either moderately quickened, or nearly natural. In the case where the respirations were most frequent, the patient was a very nervous, irritable subject, and labored under considerable pulmonary congestion. This patient recovered slowly. Most of anomalies connected with the function of respiration seemed dependent on a disordered or morbid state of the nervous centres, and were more strongly marked in proportion as the latter was manifested. *Epistaxis* was present in only one instance, and in this the sputa were tinged with blood. As there was considerable fulness of the cerebral vessels, headache, cough, &c., it was attended with great relief to all the symptoms, and the bleeding was accordingly promoted by applying leeches to the internal surface of the nostrils. *Singultus* was observed in only one case, and that terminated fatally. It was a frequent symptom from almost the very commencement of the case. It was the case in which the tongue was stiff, glazed, red, dry, and fissured, and which terminated in peritonitis, from perforation of the intestine. It was not associated with involuntary contractions of any of the voluntary muscles.

Symptoms referable to the Circulation.—With regard to the pulse, it may be said to have ranged from natural up to 130 in a minute. In no instance was it observed to be less frequent than in health. In one case, an adult, it ranged from 80 to 90 throughout the disease. In the fatal case it was usually about 100 up to the time when perforation of the intestine was supposed to have taken place, when it immediately rose to 120, and continued very frequent till death took place. On the second day after, as in a majority of cases, there was an evident exacerbation towards evening: the pulse increased in frequency accordingly. The frequency of the pulse, however, was not observed to bear any direct relation to the severity of the disease. In one of the severest cases it was tolerably full, soft, and but 90 in the minute. In one instance it was 120 for two or three days before the patient took to her bed. In children the frequency was relatively much greater than in adults. Generally, the pulse was small and feeble. Hardness of pulse was strongly marked during convalescence, and increased hardness indicated not only a favorable termination, but speedy convalescence. *Capillary congestion*, especially of the face, was generally present in the earlier stages of the disease. It bore no particular relation to the state of the general circulation, and was wholly independent of the state of the pulse. In some few cases it did not exist in any marked degree. Where it existed in any considerable degree, there was a corresponding amount of pulmonary congestion. May we not safely conclude that it is a phenomenon, solely dependent on the state of innervation?

Symptoms referable to Skin.—We refer here to its condition as to heat, dryness, moisture, &c., independent of the characteristic eruptions to which reference has already been made. In about one-half of the cases the skin remained moist throughout the whole course of the disease. In two cases sweating was profuse, and attended with a strong characteristic odor. In three cases the skin continued for the most part dry, although warm and mildly stimulating herb-teas would induce perspiration. In two or three cases the sweat was partial. In no instance was perspiration observed to exert any favorable effect on the progress of the disease, nor was it observed to prove critical in a single instance. Diaphoretics, also, had no particular influence in moderating or controlling its career. Though but little is known as to the antecedent conditions or causes on which sweating in fever depends, it seems very probable that, like capillary congestion, it is intimately connected with the state of the innervation, or condition of the nervous centres. In the fatal case already noticed, the skin remained uniformly harsh and dry, until symptoms of perforation took place, when the patient became suddenly bathed in a cold perspiration, which continued till death. On the whole, however, the state of the skin seems to have but slight pathological significance in this disease. The *heat* of the skin was pretty uniformly above the natural standard, whether dry or moist. In no instance was it observed below the natural temperature, unless of the extremities. *Pungent heat* (calor mordicans) was not noticed in any case.

The *symptoms referable to the genito-urinary system* were not very characteristic or important. The urine may be said to have been uniformly scanty, generally high-coloured, and, near the crisis, loaded with lithates. In the fatal case there was, towards the close of the disease, a frequent desire to void urine without the ability. In one or two cases of adults, the urine was passed involuntarily. In children this frequently occurred.

As to the duration of the disease, the average was about fourteen days, varying from six to twenty-two. Several went through a light attack of the disease, without taking to the bed, complaining of pains in the head, back, and limbs; loss of appetite and loathing of food; languor and debility, which lasted from two to four or five weeks. Some, who had been exposed to the disease, had copious and very offensive sweats and urine, without the other above-mentioned symptoms. No facts were observed that had any special bearing on the question of critical days. The difficulty of designating the day on which the fever may be said to have commenced, precluded the possibility of arriving at any certain conclusion on this point. If we date from the day when the patient takes to his bed, we shall greatly err, inasmuch as there is good reason to believe that the access, or forming stage, often ends some days before this event. Nor can we be more precise in regard to the date of convalescence. We can often determine, it is true, when the febrile symptoms abate, but it is often very difficult, owing to the gradual manner in which it takes place, and it is rendered still more difficult in cases where complications exist. It appears, from consulting Dr. Flint's *Report on Continued Fever*, that the average duration of his cases of typhoid fever, in private practice, was fourteen days, and of hospital cases, twenty days. My fatal case terminated on or about the fourteenth day.

The *circumstances attending convalescence* were not especially remarkable. In general, it was slow but steady. The strength was a long time in returning. The patients complained of their knees remaining particularly weak, so that they walked unsteadily, and were often in danger of suddenly falling. The bowels were generally inclined to costiveness, rendering it necessary to take laxatives, enemata, and food of a relaxing tendency. The appetite was, for the most part, craving. In one case a relapse occurred from eating too heartily of improper food in the early stage of convalescence. In a few cases convalescence was attended with copious perspiration at night. In general, there was a gradual decline of the febrile symptoms, and not a sudden abatement.

No *sequelæ* of the disease were observed worth particular notice. In one, *deafness*, which had been a prominent symptom throughout the disease, was very slowly recovered from. In no instance were glandular swellings or boils observed to follow the disease.

As but two fatal cases occurred in over fifty, and of these no opportunity for post-mortem examination occurred, we can, therefore, say nothing of the pathological appearances.

Treatment.—A few brief remarks on treatment must suffice. The following remarks embrace the results of my observation and experience as regards the management of typhoid fever, derived not only from the present epidemic, but from all I have seen and known of the disease, at home and abroad, for the last thirty years:—

I. Typhoid fever runs a definite course, is a self-limited disease, and tends spontaneously to a favourable termination. When uncomplicated, the whole management may be summed up *in good nursing, great attention to cleanliness, free ventilation,* and SUITABLE AND SUFFICIENT NOURISHMENT. Generally, no medicine whatever need be given. The bowels may be kept open by simple enemata of tepid water; the temperature of the surface regulated by frequent sponging with spirit and water; and, if there is excessive or preternatural heat of the head, cloths wet with ice water should be frequently applied. Active medication by cathartics, emetics, bloodletting, and blisters, only tends to thwart the natural tendency to recovery, to disturb the recuperative efforts, and to protract the case, besides adding greatly to the sufferings and discomfort of the patient. I have never seen or known a case of typhoid fever cut short or materially abridged by treatment; but I have known many protracted and rendered incurable by unnecessary activity.

II. The disease exhibits striking diversities, at different times and places, as regards severity, duration, and mortality, irrespective of measures of treatment;[1] but these diversities may modify the management, *so far as the kind and quantity of the nourishment are concerned,* it being assumed that in all cases the utmost attention is paid to cleanliness and ventilation.

III. The above conclusions apply to uncomplicated cases, where no local complications exist; and these are the most frequent sources of danger. *Cerebral complications* are to be combated by the appropriate remedies, such as leeches to the inner nostrils, the temples, and behind the ears, or cups to the back of the neck, if there is evidence of fulness of the cerebral vessels, removal of the hair, cold evaporating lotions, and stimulating pediluvia. It is to be noted, however, that cephalalgia, somnolency, insomnia, and delirium are, to a considerable extent, natural elements of the disease, and do not, as a general rule, indicate too great fulness of the vessels of the brain. They, for the most part, at a certain stage of the disease, subside spontaneously under the rational expectant treatment. *Somnolency* is usually benefited by opiates, understanding by it that condition of semiconsciousness from which the patient is readily but momentarily roused. *Insomnia*, or *vigilance*, demands also the use of opiates, as Dover's powder or morphia. *Delirium*, unless very active, demands no special treatment, appropriate general means being all that is usually required. Its presence does not contra-indicate the use of opiates. It may be abated by the use of *antimony* in small doses, in connection with anodynes; but its liability to disturb the stomach, and irritate the gastro-intestinal mucous membrane, renders its use objectionable. If used at all, it must be in very minute doses, and those only temporarily, and combined with demulcents and opiates. *Nausea and vomiting* will usually be promptly relieved by a sinapism to the epigastrium, or small effervescing doses of citrate of potash, aided by small doses of morphia. *Diarrhœa* yields to sinapisms and turpentine to the abdomen, anodyne and astringent enemata, and the internal use of opiates. Unless the discharges, however, are so frequent as to debilitate the patient, they should not be interfered with, especially if of a bilious character. *Hemorrhage* from the bowels is readily controlled by *opium*, *acetate of lead*, and *tannin*, administered by the mouth and by enema. *Constipation* may be obviated, generally, by simple laxative enemata. No active cathartics should be administered, as they are apt to bring on diarrhœa. If the discharges are colourless, a few grains of *blue mass*, or *hyd. cum creta*, followed by a teaspoonful of *ol. ricini*, will be proper. Generally, however, we aim to dispense with cathartics as far as possible in the management, believing that their use is hazardous, and tends to complicate the case. If used, the mildest are to be selected, as oil, magnesia, &c. If cathartics are not employed, the discharges will usually present a natural and healthy appearance throughout the whole course of the disease. *Meteorism*, or *tympanitis*, should be met by warm spirituous fomentations, or warm turpentine to the abdomen, enemata, and, if costiveness be present, a moderate dose of oil. *Abdominal tenderness* may require the same external means. *Pulmonary complications* will also require some modification of the treatment. If *pneumonitis* be present, cups or leeches over the part affected, followed by warm cataplasms, fomentations, or sinapisms, will generally be proper. General bleeding is rarely if ever admissible; and, in taking blood locally, we must carefully regulate the quantity by due regard to the constitution and strength of the patient, stage of the disease, and the extent of the local complication. The inflammation is rarely, if ever, of an active kind, and, as a general rule, rarely demands active measures. We have long since discarded antimonials and blisters in this complication, the former as too debilitating and locally irritant, the latter adding greatly to the irritability of the patient, and not attended with a corresponding degree of benefit. Sinapisms answer a far better purpose. *Mercurials* are for the most part uncalled for, unless occasionally, as when, already stated, a cholagogue effect be desired. Pulmonary or bronchial congestion, or inflammation, in typhoid fever, does not contra-indicate the employment of supporting measures. *Cough* may be allayed by opiates and demulcents, and expectoration promoted by small doses of the infusion or syrup of senega and liquorice. *Peritonitis*, if attended with perforation, will generally prove fatal under any treatment. Opiates in large doses promise the most success, aided by external fomentations, and sinapisms, &c. If unattended with perforation, the same measures will also be proper. *Apoplectic coma*, if the result of effusion, will terminate in death; if owing to exhaustion of the nervous energies, wine, brandy, and animal broths will be the appropriate remedies. Pharmaceutical *tonics*, such as quinine, &c., I have never found of much benefit in this disease. *Cinchona*, in any of its preparations, has no special curative power in this form of fever, though so admirable in intermittents and remittents. It is very apt to offend the stomach, and lessen the desire for food. *Suitable nutriment*, however, is of the first importance. Facts abundantly sustain the conclusion that the digestion and appropriation of food are not suspended, but go on in this disease. Nothing is more common than to find the evacuations remain nearly if not quite natural throughout its whole course. The stomach is not disturbed by proper food in proper form, and in proper quantity. An error in either of these respects is easily committed, and will result in injury to the patient. The grand indication, indeed, is to sustain the patient, while the disease runs its natural career. The *patient* is rather to be treated than his *disease*. Nutritious aliment, such as beef-tea, essence of beef, milk porridge, &c., may be commenced early in the disease, Dr. Flint thinks at the end of the first week. We should say on the first day, and continued through its whole course. Strong *chicken soup*, with barley or rice, will do well for a change; though the essence of beef is indispensable where there is much prostration. These articles are to be given at short and regular intervals, without any particular regard to the patient's tastes or wishes, in small or larger quantity, according to the condition of the patient, and often in connection with appropriate stimulants, as wine or brandy. The following remarks of Dr. Flint on this subject are so true and appropriate that I cannot forbear quoting them: "Nutriment must be administered not only irrespective of any expressions of desire by the patient, but without reference to his appetite, and even when taken with disgust. If the sense of hunger, the appetite and the taste are competent to govern the ingestion of food in a state of health, this is not true of continued fever. The proper exercise of these functions involves normal mental perceptions. In health, the mind feels certain impressions derived from within the organism, by which the desire for food, or hunger, expresses the demand of the system for fresh supplies. The mind, in health, experiences pleasure from the ingestion of aliment, in other words from the indulgence of appetite, and is capable of discriminating appropriate kinds of food by the sense of taste. All this is changed in fever. The mental perceptions thus fail to respond to the wants of the system; the mind lacks sufficient healthful activity for appetite or taste. The system, nevertheless, needs the addition of new materials for calorification and nutrition; and the power of assimilation, although impaired, is not wholly lost. The indication for nutriment, in short, exists; but the criteria pertaining to the consciousness of the patient, by which the indication may be measured in health, are perverted or suspended by the disease, so that it becomes necessary to fulfil the indication without consulting the mental functions, viz., hunger, appetite, or taste, which were doubtless designed to secure an adequate supply of proper aliment in health."

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[1] See Flint's Report on Continued Fever, p. 262.

The tendency to death, it may be added, in fever, is from asthenia. We guard against this danger in the most effectual manner by giving proper nutriment. Innutrition, coöperating with the essential morbid condition in fever, will give rise to delirium, prostration, and all those alarming symptoms which are generally supposed to spring from the disease itself.

P. S. Aug. 2, 1859.—Two new cases of typhoid fever only have occurred since the above paper was written, viz., the wife and daughter of a man who went through a very severe attack of the fever, and who was believed to have taken it from watching several nights with one of the sick. The fifty or more cases which have occurred, have been scattered over a district six or eight miles square, and all can be traced to exposure to the disease, except the first case, which was sporadic. No person else has been attacked, unless personally exposed. It is needless to add that this would not have happened, had the cause been atmospheric, or general, nor would it have been spread over so large a space, had it depended on local vegetable or animal decomposition. Moreover, it commenced in the coldest weather in January, and on the highest hill in this region of country, where, even in summer, no local cause of fevers exists, the locality, being, in all respects, most healthy. I submit, then, that the history of this epidemic goes to sustain the conclusion—now very generally adopted—that typhoid fever, though it may originate sporadically, from ordinary causes, yet may be propagated by idio-miasmatic effluvia, or personal infection.

ART. III.—*Amputation at the Shoulder-Joint.* By B. J. D. IRWIN, M. D., Assistant Surgeon, U. S. Army.

ON the 16th of September, 1858, I was requested to visit one of the stations of the Southern Overland Mail Company, where a number of men were reported to have been dangerously wounded. I set out at once, and arrived